

THE NORTHEASTWARD SPREAD OF  
*MICROSTEGIUM VIMINEUM* (POACEAE) INTO  
NEW YORK AND ADJACENT STATES

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ABSTRACT

*Microstegium vimineum* is a weedy species which has recently spread from New Jersey into New York and Connecticut. It has been collected at two sites along the Hudson River in New York and reported from three sites in Connecticut. Because of its ability to invade rapidly into disturbed areas, this grass may pose a threat to rare native associate species.

Key Words: *Microstegium vimineum*, grass, weed, exotic species, geographical distribution, New Jersey, New York, Connecticut

*Microstegium vimineum* (Trin.) A. Camus [= *Eulalia viminea* (Trin.) Kuntze] was introduced from Asia into Tennessee about 1919 (Fairbrothers and Gray, 1972). By 1960 this grass had naturalized and spread northward to Ohio and Pennsylvania, and eastward to all the Atlantic coastal states from Florida to New Jersey. Its geographical range has steadily expanded northeastward from Tennessee, reaching Pennsylvania in 1938, Delaware in 1942 and New Jersey in 1959 (Fairbrothers and Gray, 1972).

Since the first report of this grass from New Jersey in 1959, it has increased in abundance and spread throughout the state. According to L. Mehrhoff and D. Snyder (pers. comm.), *Microstegium vimineum* was uncommon in New Jersey ten years ago, but is now widespread. Collections from two sites in northern New Jersey during 1989 are deposited at CHRB (*Hunt NJ42*, Morris Co., Jefferson Township, along Russia Brook; *Hunt NJ43*, Somerset Co., Bernards Township, along tributary of Peapack Brook). Additionally, this grass was observed between 1988 and 1990 by the senior author at seven other sites in northern and central New Jersey (Hunterdon Co.: Readington Township; Middlesex Co.: Cranbury Township; Somerset Co.: Bedminster, Warren and Bernards Townships). These observations were invariably along rivers or small tributaries, including Millstone River, Passaic River, Chambers Brook and Muddy Run.

Fairbrothers and Gray (1972) noted that *Microstegium vimineum* occupies various habitats including creek banks, river bluffs, floodplains, damp fields, swamps, lawns, woodland thickets and

roadside ditches. In New Jersey, this species was found in habitats ranging from forested, scrub-shrub and emergent wetlands to pastures, early successional fields, and forested and disturbed uplands. It was commonly observed in transitional floodplain forests dominated by *Acer rubrum* L., *Ulmus americana* L., *Impatiens capensis* Meerb. and *Onoclea sensibilis* L., in shallow emergent wetlands along small streams with *Cornus amomum* Mill., *Rosa multiflora* Thunb. and *Polygonum sagittatum* L., and in wet meadows with *Carex lurida* Wahl., *Juncus effusus* L., *Phalaris arundinacea* L. and *Euthamia graminifolia* (L.) Nutt. Barden (1987) noted that this grass readily invades and occurs most abundantly in areas which have undergone natural (e.g., flood scouring) and artificial (e.g., mowing, tilling) disturbance.

*Microstegium vimineum* has most recently spread northeastward from New Jersey into New York. Fertile collections made in September 1987 from two sites registered by The Nature Conservancy (TNC) in the Hudson River Valley are deposited at NYS (*Zaremba 4254*, Dutchess Co., Town of Fishkill, red maple woods near a man-made berm on the S Side of Fishkill Creek near its mouth; *Zaremba 4255*, Rockland Co., Town of Stony Point, moist open forested wetland on Round Island). These specimens may be the only collections of this species from New York since this species is absent from the recent Checklist of New York State Plants (Mitchell, 1986).

The spread of *Microstegium vimineum* has also continued northeastward into Connecticut. Populations were recently observed at a site owned by TNC in the Town of Haddam (Middlesex Co.) along the Connecticut River (L. Mehrhoff, pers. comm.), and in New Haven (New Haven Co.) and New London (New London Co.) (G. Tucker, pers. comm.). These reports may be the first of the occurrence of *M. vimineum* in Connecticut and New England, as this grass is not listed in Seymour's (1989) *Flora of New England*.

Because *Microstegium vimineum* is apparently lacking in uplands which intervene between the Hudson and Connecticut Rivers, it is hypothesized that this species may be nearing its northern limit due to a lack of cold hardiness. Barden (1987) noted the susceptibility of North Carolina populations to late frost. This species may continue to spread northeastward to a limited extent along estuaries of Connecticut, Rhode Island and southeastern

Massachusetts where the local climate is warmer than adjacent inland areas. It may also spread farther upstream to the tidal limits of the Hudson and Connecticut Rivers and their tributaries and increase in abundance in the lower Hudson and Connecticut River Valleys.

A second possible explanation for the distribution of *Microstegium vimineum* is that it occurs primarily in areas of red clay soils. New Jersey collections were from the Piedmont physiographic province, noted for such soils. This species was commonly found in alluvial soils composed of sandy clay loam associated with crimson-colored Brunswick shale. This grass is considered a characteristic Piedmont species (Godfrey, 1980) and its distribution in Georgia (Jones and Coile, 1988) and the Carolinas (Radford et al., 1968; Barden, 1987) corresponds closely with the limits of the Piedmont in these states. The New York and Connecticut populations occur in areas where red clay is locally abundant. If soil type is limiting the spread of *M. vimineum*, then this species may be approaching its maximal geographic extent in New York and New England, since large areas of red clay are uncommon outside the Hudson and Connecticut River Valleys. In this respect, *M. vimineum* may parallel other taxa whose range is closely linked to the distribution of red clay soils such as *Quercus marilandica* Muenchh., *Q. stellata* Wang., *Diospyros virginiana* L., *Pinus echinata* Mill. and *Asclepias viridiflora* Raf.

*Microstegium vimineum* is colonial in nature, rooting at the nodes and forming dense monotypic stands. A rapid rate of spread has been documented for this species, especially in disturbed areas (Barden, 1987). Although it may not be as aggressive and form colonies as dense and as tall as *Phragmites australis* (Cav.) Trin. ex Steud., *Lythrum salicaria* L. or other exotic species, it could threaten uncommon native wetland species along the Hudson and Connecticut Rivers. It may become necessary to establish an active monitoring and eradication program to ensure survival of these rare species. The North Carolina office of TNC is preparing an "Element Stewardship Abstract" for *M. vimineum* which summarizes the ecology of the species, the threat it poses to native vegetation, and known means of control. It is the intent of this article to increase awareness of the potential danger of this weedy species in the northeast with regard to possible future extirpation of rare native associate species.

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